

Notice of Allowability

Application No.

10/629,754

Examiner

Frederick F. Rosenberger

Applicant(s)

TOKHTUEV ET AL.

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Response filed 17 November 2005.
2. ☒ The allowed claim(s) is/are 1-5, 7-15 and 17-42.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>11/17/05</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. Applicant's reply, filed 17 November 2005, has been received and entered.

Accordingly, changes have been made to the drawings, the abstract, and the specification. Claims 1, 2, 4, 7, 10, 13, 14-17, 24, 28, 29 and 31 have been amended. No claims have been cancelled. Claim 42 has been added. Thus, claims 1-42 are currently pending in this application.

2. The drawings were received on 17 November 2005. These drawings are acceptable.

3. Applicant's new drawings and the amendments to the specification and the claims have successfully overcome the objections to the drawings, the specification, and claims 2, 10, 15, 17, 28, 29, and 31, as detailed in the last Office action.

4. Applicant's amendment of claims 7, 15, 16, and 24 has successfully overcome the rejection of said claims under 35 U.S.C. 112, as detailed in the last Office action.

EXAMINER'S AMENDMENT

5. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

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Authorization for this examiner's amendment was given in a telephone interview with Jennifer Teng on 2 February 2006.

The application has been amended as follows:

Claim 1 (Currently Amended). A radiation sensor comprising:

a housing, an attenuator with at least one cavity for attenuating optical radiation, and at least one UV detector,

wherein a window of the housing for receiving external radiation and the detector are located on an identical side of the attenuator, and

said attenuator has several cavities and means for transferring radiation from a first cavity to at least one secondary cavity inside of the attenuator.

Claim 6 (Cancelled).

Claim 7 (Currently Amended). The radiation sensor as claimed in claim ~~[[6]]~~ 1, wherein each of the secondary cavities directs scattered and attenuated light to a respective detector therein with a different spectral range of sensitivity.

Claim 8 (Currently Amended). The radiation sensor as claimed in claim ~~[[6]]~~ 1, wherein said means for transferring radiation includes a semi transparent part of the attenuator.

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Claim 9 (Currently Amended). The radiation sensor as claimed in claim ~~[[6]]~~ 1, wherein said means for transferring radiation includes an opening between the first and secondary cavities in the attenuator.

Claim 10 (Currently Amended). The radiation sensor as claimed in claim ~~[[6]]~~ 1, wherein said attenuator has a body made of fluoropolymer or metal, and the first cavity has an opening adjacent to the window of the housing, and the secondary cavity has an opening adjacent to the detector.

Claim 15 (Currently Amended). ~~[[The]]~~ A radiation sensor ~~as claimed in claim 1,~~
comprising:

a housing;

at least one UV detector; and

an attenuator with one light scattering cavity for attenuating optical radiation and at least two channels each connected with the light scattering cavity,

wherein said ~~attenuator has an attenuator body having~~ channels include a first aperture ~~channel~~ for receiving a first light guide, and a second aperture ~~channel~~ for receiving a first ~~second~~ light guide, and

the detector and windows of the housing for receiving external radiation into the light guides are located on an identical side of the attenuator.

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Claim 16 (Cancelled).

Claim 19 (Currently Amended). The radiation sensor as claimed in claim [[6]] 1, wherein a UV Long Pass Filter is placed inside the secondary cavity and in front of said detector.

Allowable Subject Matter

6. Claims 1-5, 7-15, and 17-42 are allowed.

7. The following is an examiner's statement of reasons for allowance:

Claim 1 is directed to a radiation sensor with a housing, an attenuator with several cavities, and a UV detector. Multiple attenuating cavities are known in the art, but are typically arranged with the detector and radiation-receiving window on opposite sides of the attenuator. Single cavity attenuators are known wherein input and output light guides are located on the same side of the attenuator, especially with regards to optical communication systems operating in the near-IR regime. Although single attenuating cavities are known, the prior art is silent with regards to multiple attenuating cavities with a means for transferring radiation for a first cavity to a second cavity inside the attenuator wherein a UV detector and a window for receiving external radiation are on the same side of the attenuator. As such, claim 1 and its associated dependent claims are allowed.

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Claim 14 includes the limitation of a moveable cylindrical insert inside the first cavity that enables adjustment of the radiation passing from the first cavity to the secondary cavity. The prior art fails to teach or reasonably suggest the inclusion of such an insert in the cavity of a radiation sensor. As such, claim 14 is allowed.

Claim 15 includes the limitation of a first and second channel with first and second light guides, respectively, connected to a single light scattering cavity of the attenuator with the windows of the housing for receiving external radiation into the light guides are located on an identical side of the attenuator as the detector. Single cavity attenuators are known wherein input and output light guides are located on the same side of the attenuator, especially with regards to optical communication systems operating in the near-IR regime. Although single attenuating cavities are known, the prior art is silent with regards to multiple light guide channels in addition to a UV detector wherein the UV detector and the windows for receiving external radiation into the light guides are on the same side of the attenuator. As such, claim 15 is allowed.

Claim 28 is directed to a method for sensing UV radiation, wherein a radiation attenuator with at least two cavities and a means for transferring radiation from a first cavity to a secondary cavity inside the attenuator can be adjusted such that the radiation impinging on a UV detector is at a predetermined level. The prior art fails to teach or reasonably suggest a method wherein the means for transferring radiation, specifically UV radiation, internally from one cavity of the attenuator to another can be adjusted. As such, claim 28 and its associated dependent claims are allowed.

Claim 33 is directed to an optical attenuator with at least one attenuating cavity and with means for transferring radiation inside of the attenuator body and to an external detector. Single cavity attenuators are known wherein input and output light guides are located on the same side of the attenuator, especially with regards to optical communication systems operating in the near-IR regime. Although single attenuating cavities are known, the prior art is silent with regards to a multi-stage input opening or plural input openings for the attenuator body. As such, claim 33 and its associated dependent claims are allowed.

Claim 42 is directed to a radiation sensor with a housing, an attenuator with at least two cavities, and a detector. Multiple attenuating cavities are known in the art, but are typically arranged serially (i.e. a second cavity disposed after the first cavity in a direction parallel with a receiving surface of the window), thus requiring the detector and radiation-receiving window to be on opposite sides of the attenuator. Although multiple attenuating cavities are known, the prior art is silent with regards to the two cavities arranged side by side in a direction parallel with the receiving surface of the window. As such, claim 42 is allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick F. Rosenberger whose telephone number is 571-272-6107. The examiner can normally be reached on Monday-Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick F. Rosenberger
Patent Examiner
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